PIONEER
ENVIRONMENTAL SERVICES, LLC

Amended Remedial Action Plan
Remediation Site #2

0316006117 / Cook County
Chicago / 3434 West 51st Street Project
3434 West 51st Street

Prepared For:
United Neighborhood Organization
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Attn: Andrew Alt

Project Number:
10-0461-106

July 5, 2012

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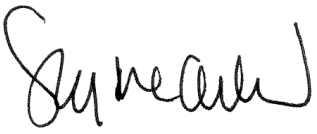
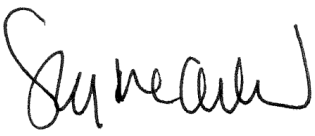


Jeffrey McClelland, P.E.
Vice President

Licensed Professional Engineer Affirmation

I attest that all site investigations or remedial activities, including review of laboratory data, that are the subject of this plan or report were performed under my direction and this document and all attachments were prepared under my direction or reviewed by me, and, to the best of my knowledge and belief, the work described in the plan or report has been designed or completed in accordance with the Act, 35 Ill. Adm. Code 740, and generally accepted engineering practices, and the information presented, including any qualified laboratory data is accurate and complete.

In addition, I affirm that the documentation of the prior investigations or remedial activities is suitable for use and consideration in evaluating site conditions in connection with this assessment.



Jeffrey McClelland, P.E.
Vice President

10-0461-106

Pioneer Project Number

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EXECUTIVE SUMMARY

Pioneer Environmental Services, LLC (Pioneer) was contracted by United Neighborhood Organization (UNO), the client and Remediation Applicant, to provide environmental site closure services for the subject property located at 3434 West 51st Street in Chicago (Cook County), Illinois. The Remediation Site consists of a rectangular-shaped parcel that encompasses approximately 8.8 acres and was enrolled into the Illinois Environmental Protection Agency (IEPA) Site Remediation Program (SRP) by the United Neighborhood Organization (UNO).

Due to the redevelopment plans for the property, the remedial actions have been divided into two phases. Phase 1 of the redevelopment included the southeastern portion of the site (approximately 2.977 acres) associated with the construction of an elementary school and associated parking lot. A *Remedial Action Completion Report - Remediation Site #1* (RACR #1), dated August 10, 2011, for the Phase 1 portion of the redevelopment was previously submitted to and approved by the IEPA in a comprehensive No Further Remediation (NFR) letter, dated August 31, 2011.

Phase 2 includes the remaining 5.823 acres of the site. A *Remedial Action Completion Report - Remediation Site #2* (RACR #2) was previously submitted to the IEPA which provided the information necessary to secure a comprehensive NFR letter for the Phase 2 portion of the site. In addition, a *Remedial Action Completion Report - PCB Activities* (PCB RACR) was prepared and submitted to the USEPA and IEPA. The IEPA conditionally approved RACR #2, in a letter dated September 13, 2011, pending USEPA approval of the PCB RACR and receipt of photo documentation of installed engineered barriers. A letter documenting the installation of concrete/asphalt engineered barriers was submitted to IEPA on September 28, 2011. To date, the USEPA has not reviewed the PCB RACR and a final NFR letter has not been issued for Remediation Site #2.

For reference, the following reports were previously prepared by Pioneer and submitted to the IEPA for review and evaluation.

- *Phase I Environmental Site Assessment*, dated November 3, 2010;
- *Self-Implementing PCB Cleanup Application - 40 CFR 761.61(a)* (PCB Application), dated December 20, 2010;
- *Comprehensive Site Investigation Report, Remediation Objectives Report & Remedial Action Plan* (CSIR/ROR/RAP), dated January 27, 2011;
- *Tier 3 Migration to Groundwater Evaluation*, dated March 23, 2011;
- *Remedial Action Completion Report - Remediation Site #1* (RACR #1), dated August 10, 2011;
- *Remedial Action Completion Report - Remediation Site #2* (RACR #2), dated August 31, 2011; and
- *Remedial Action Completion Report - PCB Activities* (PCB RACR), dated November 1, 2011.

Since the redevelopment plans for the Phase 2 portion of the site were uncertain at the time RACR #2 was prepared and to be protective of the new elementary school that was constructed in the Phase 1 portion of the site, the asphalt/concrete engineered barriers were used as temporary caps for residually impacted areas of the site. Development plans have now been finalized and include the construction of a new high school with a soccer field in the northern portion of the site. As a result of the new development plans in the northern portion of the site, limited additional testing was performed to evaluate soil disposal requirements during construction. This testing identified residual concentrations of gasoline contamination in the area of former underground storage tanks (USTs), which was also the area of Hot Spot-7. The proposed final engineered barriers associated with the new development plan include either asphalt, concrete, or a 3-foot thick layer of clean soil. The purpose of this *Amended Remedial Action Plan* (Amended RAP) is to provide the IEPA with details regarding the additional soil sampling data, the planned additional soil remediation, and the planned engineered barrier configuration. It is important to note that with the exception of recently identified residual gasoline impacts in the area of Hot Spot-7, which will be remediated, there are no substantive changes to the remedial approach that was outlined in the original CSIR/ROR/RAP.

The southwestern portion of the site will likely be developed with an early childhood center and associated parking lot, although the plans for that area are not finalized at this time. Until the time of development, the asphalt/concrete engineered barriers will remain intact in that portion of the site. When the development plans are finalized, they will include engineered barriers consisting of either asphalt, concrete, or a 3-foot thick layer of clean soil.

The required State enrollment and review form (DRM-2) associated with this submittal are included in Appendix A.

This report has been prepared for the sole use of the Remediation Applicant identified in the report, and for evaluation by the Illinois EPA and USEPA, and can not be relied upon by other persons or entities without the permission of Pioneer. The observations and conclusions contained herein are limited by the scope and intent of the work mutually agreed upon by the client and Pioneer and the work actually performed. There are no warranties, implied or expressed, concerning the environmental integrity of areas and/or mediums not analytically tested.

1.0 SUPPLEMENTAL SITE INVESTIGATION

1.1 Introduction

Due to relatively recent regulatory revisions (proposed 35 IAC 1100, dated July 29, 2011) regarding the disposal of Clean Construction and Demolition Debris (CCDD), limited additional soil sampling was completed at the site to determine if soils would meet the classification for disposal as CCDD during redevelopment. Based on a review of the cumulative testing data, it was determined that most soils located east of a previously established "East/West" dividing line (see Figure 5 of this report and Section 3.4 of the CSIR/ROR/RAP) would meet the requirements for disposal as CCDD. However, supplemental sampling was necessary in certain areas as outlined in the following Table 1-1.

Table 1-1 Supplemental Sampling Plan

Soil Boring ID	Total Depth (ft)	Interval(s) Sampled (ft)	Analysis	Investigation Purpose
B-201	4	0-4	SPLP Lead	Further evaluation of total lead concentration (335 ppm) at boring PB-64 (0-4)
B-202	12	0-4, 6-8	BTEX	Further evaluation of residual BTEX concentrations in area of Hot Spot-7
B-203	12	0-4, 4-8	BTEX	Further evaluation of residual BTEX concentrations in area of Hot Spot-7
B-204	8	4-6	SPLP Chromium	Further evaluation of total chromium concentration (24 ppm) at boring PB-16 (4-6)

Notes: BTEX = benzene, toluene, ethylbenzene, total xylenes

1.2 Soil Boring Advancement/Sampling

Pioneer mobilized subsurface drilling equipment and OSHA-certified personnel to the Remediation Site on April 13, 2012. Soil samples were collected utilizing a truck-mounted hydraulic percussive GeoProbe® soil probing unit using dual-tube stainless steel barrel samplers lined with PVC sleeves. Sample collection procedures implemented in the field by Pioneer were performed in accordance with the industry standard ASTM D 6282, and SW-846 Method 5035, and were consistent with generally accepted engineering practices. After the sample from each interval was retrieved, the undisturbed soil sample was immediately field screened within the sample liner or split spoon using a Mini-Rae 2000 hand-held photoionization detector (PID), a device sensitive to a variety of VOCs, to provide a qualitative indication of the relative concentrations of contaminants in the soil samples. The maximum screening results and geological conditions encountered are listed on the soil boring logs provided in Appendix B.

A standard protocol for Pioneer's soil investigation activities is included in Appendix B. Soil boring locations are depicted on Figure 2.

1.3 Field Observations

Indications of contamination consisting of elevated PID readings and gasoline odors were observed during the soil sampling activities at soil borings B-202 and B-203. These borings were advanced in the area of historical underground storage tanks (USTs) which was the area of the prior Hot Spot-7 remediation. Since Hot Spot-7 was remediated to meet Tier 2 SROs, field evidence of impact was not unanticipated, although the observed impacts were more evident than expected. The field observations of contamination in B-202 and B-203 were noted from near surface grade to depths of approximately 8 feet below surface grade (BSG). No obvious field evidence of contamination was observed during the sampling of borings B-201 or B-204. A detailed description of Pioneer's field observations is included on soil boring logs in Appendix B.

1.4 Analytical Testing Results

The analytical results outlined herein are compared to the Tier 1 Soil Remediation Objectives (SROs) found in 35 IAC 742 (TACO). Tier 1 SROs are based on a risk assessment that incorporates a conservative exposure scenario and yields values relative to three primary exposure routes, namely ingestion, inhalation, and the soil component of the groundwater ingestion exposure route (also known as the migration to groundwater exposure route). The Tier 1 SROs for the ingestion and inhalation exposure routes are dependent upon the populations of concern (residential, industrial/commercial and construction worker populations). The Tier 1 SROs for the migration to groundwater route and the Tier 1 GROs are divided into Class I and Class II groundwater designations. Pursuant to the Part 742 regulations, the values for each of the applicable exposure routes must be presented for matters of comparison and the most stringent is used as the remediation objective for a particular contaminant.

Since Remediation Site #2 will be utilized as a high school, the applicable remediation objectives for the soil ingestion and inhalation exposure routes initially included the Tier 1 SROs for residential property and construction worker populations. Tier 2 SROs were also previously calculated for the site. Furthermore, since shallow groundwater at the site was previously classified as Class II groundwater (refer to Section 1.4.5.3 of the CSIR/ROR/RAP), the SROs for the migration to Class II groundwater exposure route apply to the Remediation Site.

1.4.1 Tier 1 SRO Comparison

The analytical results from Pioneer's recent, supplemental investigation activities indicate that certain BTEX compounds were detected at concentrations that exceed the applicable Tier 1 SROs in the samples collected from the area of Hot Spot-7. Table 1-2 on the following page provides a summary of the soil sample locations where the applicable Tier 1 SROs were exceeded.

Table 1-2 Soil Sample Locations Where COCs Exceed Applicable Tier 1 SROs

Sample ID	Ingestion (residential)	Inhalation (residential)	Ingestion (construction worker)	Inhalation (construction worker)	Migration to Class II Groundwater
B202 (0-4)	--	benzene	--	xylenes	benzene
B202(6-8)	--	benzene	--	benzene	benzene
B203 (0-4)	benzene	benzene	--	benzene	benzene, ethylbenzene
B203 (4-8)	--	benzene	--	--	benzene

The analytical result of the sample collected from B-201 (0-4) indicated that SPLP lead was detected above the Tier 1 SRO for the migration to Class I groundwater exposure route (the applicable SRO for the CCDD evaluation), but below the Tier 1 SRO for the migration to Class II groundwater exposure route (the applicable SRO for the SRP evaluation). The analytical result of the sample collected from B-204 (4-6) indicated that SPLP chromium was less than the Tier 1 SRO for the migration to Class I groundwater exposure route.

A complete listing of the soil sample analytical results is provided in the attached Table Nos. 1 and 2 (in the "Tables" section of the appendices). A copy of the complete laboratory analytical report associated with the supplemental investigation is included in Appendix C of this report.

1.4.2 Tier 2 SRO Comparison

Pioneer previously performed a Tier 2 evaluation to determine site-specific SROs for the migration to Class II groundwater exposure route and residential inhalation exposure routes. The complete Tier 2 evaluation was previously presented in the approved CSIR/ROR/RAP.

A comparison of the calculated Tier 2 SROs for the migration to Class II groundwater exposure route is provided in the following Table 1-3.

Table 1-3 Tier 2 SROs for Migration to Class II Groundwater

Targeted COC	Sample ID & Depth	Highest Detected Concentration Exceeding Applicable Tier 1 SROs	Tier 2 SRO – Migration to Class II Groundwater Exposure Route
Benzene	B202 (0-4)	**1.67**	0.64 (surface)
	B203 (0-4)	**18.7**	
	B202 (6-8)	**2.62**	0.68 (subsurface)
	B203 (4-8)	**1.02**	
Ethylbenzene	B203 (0-4)	56	143.32 (surface)

Notes: All values listed in mg/kg (parts per million [ppm])

As shown in the preceding table, the highest detected concentrations of benzene exceed the site-specific Tier 2 SROs for the migration to Class II groundwater exposure route. Therefore, further evaluation of benzene is warranted with respect to the groundwater ingestion exposure route.

A comparison of the calculated Tier 2 SROs for the residential inhalation exposure route is provided in the following Table 1-4.

Table 1-4 Tier 2 SRO for Residential Inhalation Exposure Route

Targeted COC	Sample ID & Depth	Concentration	Tier 2 SRO – Residential Inhalation Exposure Route
Benzene	B202 (0-4)	1.67	6.28
	B202 (6-8)	2.62	
	B203 (0-4)	**18.7**	
	B203 (4-8)	1.02	

Notes: All values listed in mg/kg (parts per million [ppm])

As shown in the preceding table, the detected concentration of benzene in soil at B203 exceeds the site-specific Tier 2 SRO for the residential inhalation exposure route. Therefore, further evaluation of benzene is warranted with respect to the residential inhalation exposure route.

1.5 Supplemental Site Investigation Summary

As shown in the preceding sections, residual concentrations of benzene, ethylbenzene and total xylenes were detected in the area of historical UST systems (Hot Spot-7). Although this area was previously remediated to meet Tier 2 SROs, it appears that additional impacts are present beyond the area identified in the original site investigation work. Since the impacts were detected in shallow soils and exceed both the migration to Class II groundwater and soil inhalation Tier 2 SROs, additional soil remediation will be completed in this area as described in Section 2.0 of this report. The results of the SPLP lead and chromium testing indicated that the area of B-201 would not qualify as CCDD for disposal, but the area of B-204 will meet the criteria for disposal as CCDD.

2.0 AMENDED REMEDIAL ACTION PLAN

2.1 Introduction

As noted in the preceding sections of this report, supplemental site investigation activities performed at Remediation Site #2 identified residual concentrations of gasoline-related contaminants associated with historical USTs (Hot Spot-7) that require additional soil remediation. In addition, due the planned redevelopment of the Phase 2 portion of the property, the configuration of the proposed, final engineered barriers is presented herein for reference.

As outlined in the prior reports prepared for the Remediation Site, ten hot spot areas were previously identified at Remediation Site #2 which were successfully remediated as outlined in the following Table 2-1 and are shown on Figure 3 of this report.

Table 2-1 Completed Remedial Actions

Location	Sample ID	Contaminant(s) of Concern	Remedial Action(s)
Hot Spot-1	PB-2(0-4)*	TCLP lead	Insitu Treatment & Conventional Remediation, Tier 3 Evaluation, Engineered Barriers
Hot Spot-2	PB-3(0-3)*	TCLP lead	Insitu Treatment & Conventional Remediation, Tier 3 Evaluation, Engineered Barriers
Hot Spot-3	PB-56(0-2.5)	TPH	Conventional Remediation
Hot Spot-4	PB-17(6-8)	arsenic	Conventional Remediation
Hot Spot-7	PB-13(0-4)	benzene	Conventional Remediation
Hot Spot-8	PB-6B(7.5-10), PB-6E(2.5-5)	vinyl chloride	Conventional Remediation, Engineered Barrier, HASP and Chicago Groundwater Ordinance
Hot Spot-9	PB-62(0-4)	benzo(a)anthracene	Conventional Remediation
Hot Spot-10	Various	PCBs	Conventional Remediation
Hot Spot-11	Various	PCBs	Conventional Remediation
Hot Spot-12	Various	PCBs	Conventional Remediation

Note: * Also includes certain Hot Spot delineation borings (i.e. PB-2B, PB3A, PB-3B, etc.)
PCBs = polychlorinated biphenyls
PNAs = polynuclear aromatic hydrocarbons
VOCs = volatile organic compounds
HASP = Health & Safety Plan
Hot Spots-5 and -6 were located in Remediation Site #1

As previously discussed in RACR #2 and with regard to Hot Spot-8, the planned depth of excavation was 10 feet BSG, however, since the base samples collected from the southern half of the excavation exhibited VOCs at concentrations above the applicable SROs, the excavation was extended to 12 feet BSG in that area. The base samples collected at 12 feet BSG also exhibited elevated VOC concentrations. As a result and since a 10-foot thick layer of clean soil could be used as an engineered barrier to prevent potential future exposure via the soil inhalation exposure route, no further excavation was performed in that area.

As discussed in Section 3.4 of the CSIR/ROR/RAP, the site grading was developed with the intention of minimizing the overall environmental impact of transporting and disposing of materials generated during site redevelopment. Of significant importance to the sustainable construction plan was the establishment of soil management zones (SMZs) encompassing portions of Remediation Site #2 to allow for the redistribution of impacted materials during construction.

The SMZ was proposed for the western portion of the site (west of the "East-West Dividing Line") and was utilized for filling of the excavations associated with remediation activity at Hot Spots 1, 2, 3, 10, 11 and 12. Since the excavation confirmation samples indicated that the southern half of Hot Spot 8 would require a clean soil engineered barrier, only the northern half of Hot Spot 8 was utilized as part of the SMZ. The majority of the fill used in these areas included the excess materials that were previously underlying raised loading docks that were demolished to facilitate redevelopment. With regard to Hot Spots 4, 7 and 9 and the southern portion of Hot Spot 8, these excavations were backfilled with imported clean stone.

2.2 Active Remediation - Special Waste Soil

As previously discussed, the results of Pioneer's recent supplemental assessment identified residual concentrations of benzene, ethylbenzene and total xylenes in the shallow soils in the area of Hot Spot-7. The Remediation Applicant has elected to remediate this location in order to eliminate engineered barrier and groundwater modeling requirements in this area of the site. The soil samples identified in Table 2-2 will be included in this remediation.

Table 2-2 Special Waste Remediation

Hot Spot ID	Sample ID	Contaminant of Concern	Concentration (ppm)	Applicable Cleanup Objective (ppm)
Hot Spot 7	B202 (0-4)	benzene	1.67	0.64(1)
	B203 (0-4)	benzene	18.7	
	B202 (6-8)	benzene	2.62	
	B203 (4-8)	benzene	1.02	

Notes: (1) = Tier 2 SRO for migration to Class II groundwater

As noted in Table 2-2, the applicable COC is listed as benzene. It is anticipated that the remediation of the benzene impacts will also address the detected concentrations of ethylbenzene and total xylenes.

A representative sample of the impacted materials was previously analyzed for the appropriate landfill waste characterization analyses and submitted to the appropriate landfills for disposal authorization. The appropriate waste manifests will accompany each load of contaminated soil. Confirmation samples collected at the time of remediation will be analyzed for BTEX and will be utilized to verify that the appropriate COCs meet the applicable SROs.

Excavation closure samples will be collected at approximately 20-foot equally spaced intervals along the excavation sidewalls and base with a minimum of one sample collected from each surface of the excavation. All sidewall samples will be collected at locations that represent approximately two-thirds (2/3) of the total depth of the excavation. Excavation will continue until the confirmation samples verify the applicable cleanup objectives have been achieved.

In addition to the remediation of the recently identified gasoline impacts, excess construction spoils generated from contaminated areas of the site will be transported and properly disposed of off-site.

2.3 Installation of Engineered Barriers

As outlined in the approved CSIR/ROR/RAP, in order to eliminate the soil ingestion exposure route, engineered barriers will be installed at specific portions of the Remediation Site (Figure 5). Specifically, engineered barriers will be required at the western portion of Remediation Site #2 due to the presence of PCBs (see PCB Application, Figure 5), other Targeted COCs, and the established SMZs.

As with the original plan, the engineered barriers will consist of either concrete or asphalt in hardscapes, or three feet of clean soil in greenspaces. Through the installation of asphalt, concrete, or three feet of clean soil in these areas of the site, the ingestion exposure routes will be effectively eliminated at the Remediation Site. As noted previously, the southern portion of Hot Spot-8 encountered residual concentrations of VOCs above the soil inhalation exposure route. This area was previously excavated to a depth of 12 feet BSG and was filled with clean stone fill to serve as the engineered barrier (Figure 5).

In connection with the use of any “clean” fill as engineered barriers in greenspaces, Pioneer proposes the following methodology to demonstrate that imported soils meet applicable Illinois EPA requirements.

- The source location for the imported clean soil will be investigated to determine potential historical land use (by reviewing aerial photographs, topographic maps, Sanborn maps) and whether the source property is listed on any State or Federal environmental databases.

- Samples from each source location will be analyzed for VOCs, SVOCs (including PNAs), Priority Pollutant 13 metals, PCBs, and Pesticides to confirm that the imported soil meets the most stringent Tier 1 SROs at a rate of one sample per 1,000 cubic yards of imported fill.

2.4 Summary & Conclusions

As discussed, the purpose of this Amended RAP is to provide the IEPA with details regarding the supplemental soil sampling data, the planned additional soil remediation, and the planned engineered barrier configuration. With the exception of the recently identified residual gasoline impacts in the area of Hot Spot-7, which will be remediated, there are no substantive changes to the remedial approach that was outlined in the original CSIR/ROR/RAP. In summary, conventional remediation will be completed, soils will be properly disposed of during redevelopment, and any remaining impacts will be capped with either asphalt, concrete or three feet of clean soil with the exception of the southern portion of Hot Spot-8 which was previously capped with a minimum of 10 feet of clean stone fill. Based on the cumulative information provided, Pioneer respectfully requests IEPA approval of this Amended RAP.

3.0 CLOSING REMARKS

This report has been prepared for the use of the client (Remediation Applicant) identified in the report, and for evaluation by the Illinois EPA and USEPA, and can not be relied upon by other persons or entities without the permission of Pioneer Environmental Services, LLC (Pioneer). The observations and conclusions contained herein are limited by the scope and intent of the work mutually agreed upon by the client and Pioneer and the work actually performed. There are no warranties, implied or expressed, concerning the environmental integrity of areas and/or mediums not analytically tested.

4.0 REFERENCES

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Figure 1 Site Plan

North

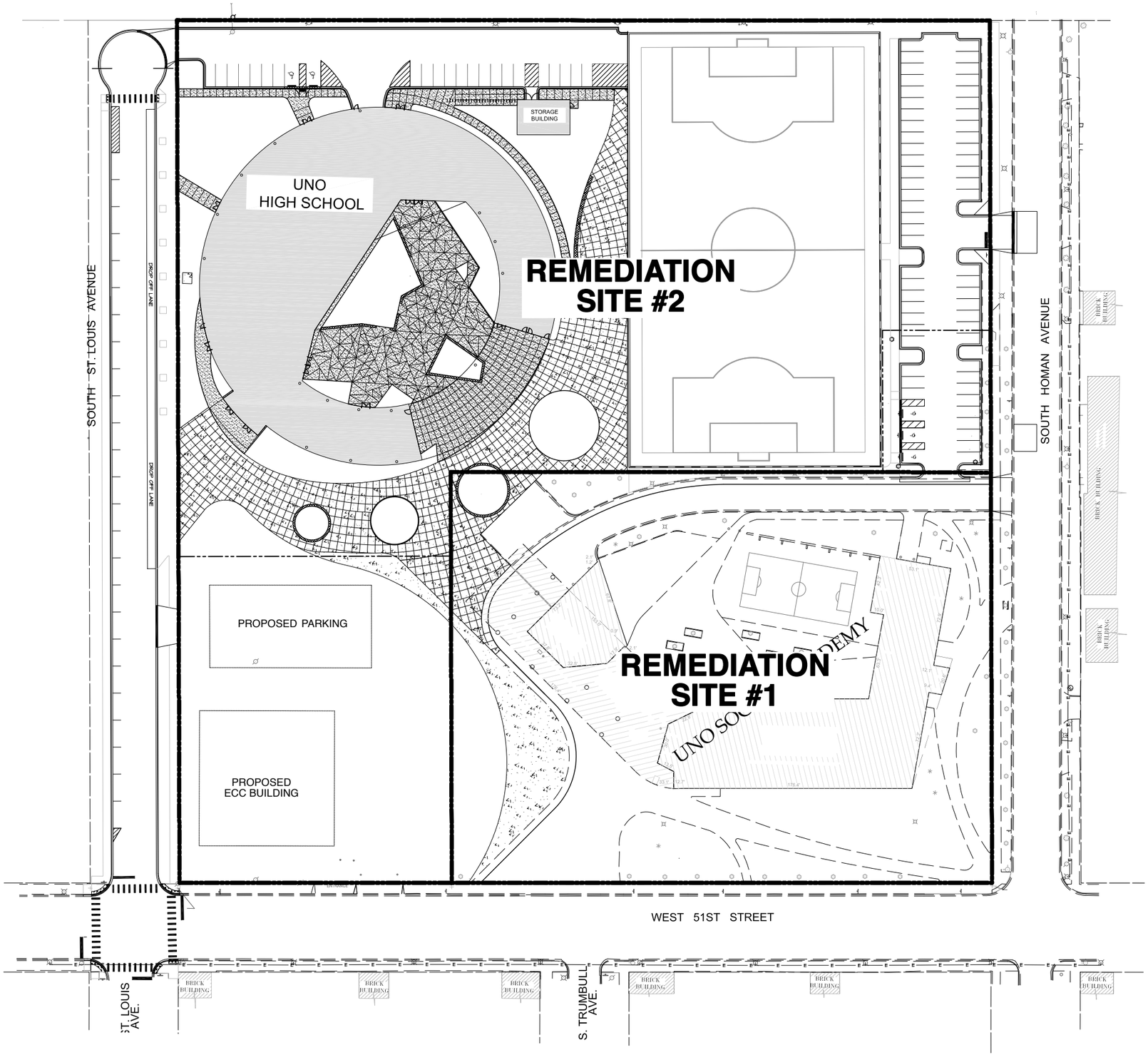

Figure 1
Site Plan
3434 West 51st Street
Chicago, IL

Scale: 1" = 80'
0' 80'

Drawn by: Kayle Drucker

Job No: 10-0461-106

Date: July 5, 2012

Checked by: Jeff McClelland

Legend:

Approximate Remediation Site Boundaries

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Figure 2 Soil Boring and Monitoring Well Locations

North

Figure 2
Soil Boring and Monitoring Well Locations
3434 West 51st Street
Chicago, IL

Scale: 1" = 80'
0' 80'

Drawn by: Kayle Drucker

Job No: 10-0461-106

Date: July 5, 2012

Checked by: Jeff McClelland

Legend:
- Soil Boring Location
- Soil Boring Location (2012)
- Monitoring Well Location
- Approximate Remediation Site Boundaries

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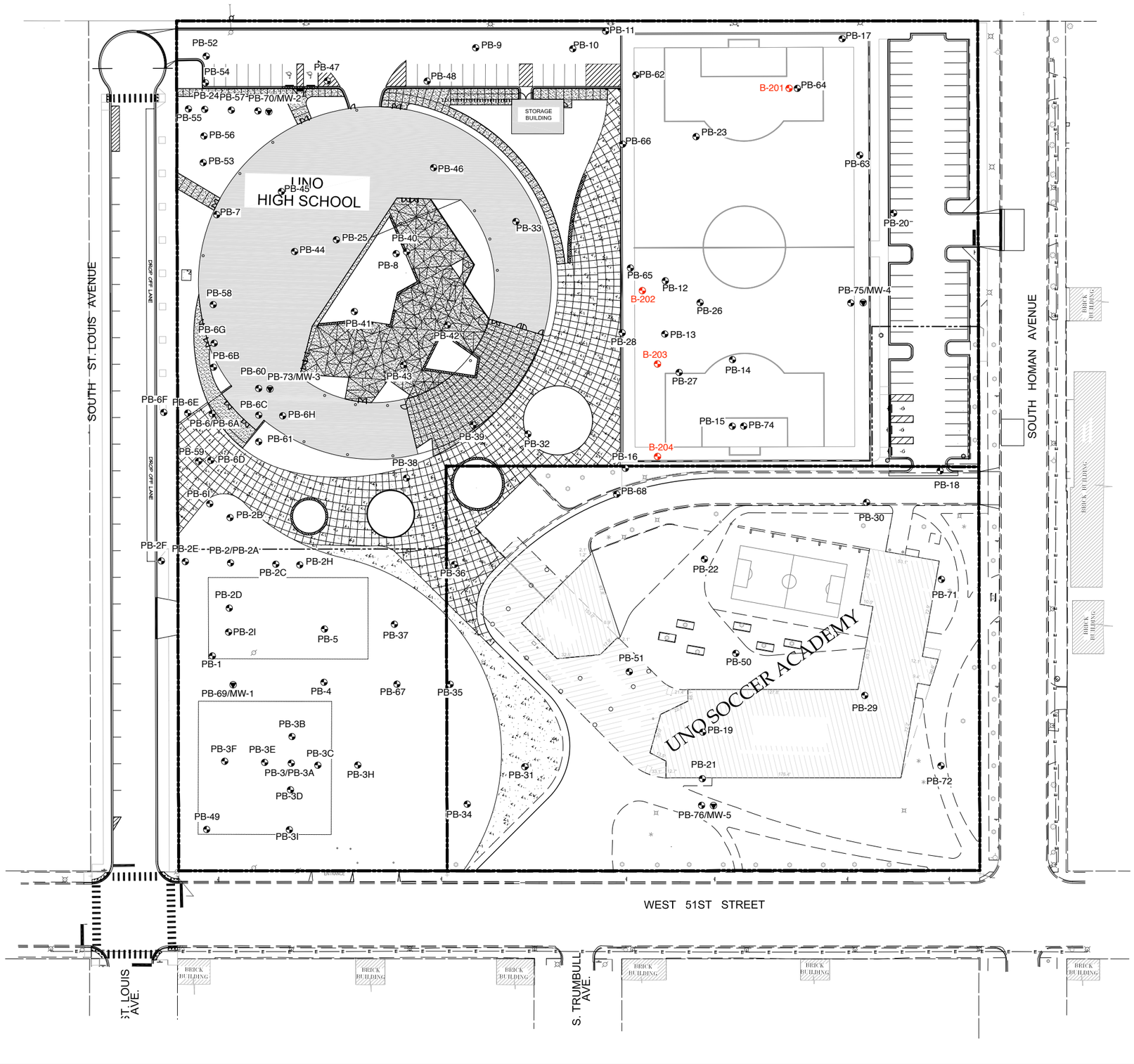

Figure 3 Hot Spot Locations

North

Figure 3
Hot Spot Locations
3434 West 51st Street
Chicago, IL

Scale: 1" = 80'
0' 80'

Drawn by: Kayle Drucker

Job No: 10-0461-106

Date: July 5, 2012

Checked by: Jeff McClelland

Legend:
- Soil Boring Location
- Soil Boring Location (2012)
- Monitoring Well Location

Approximate Remediation Site Boundaries

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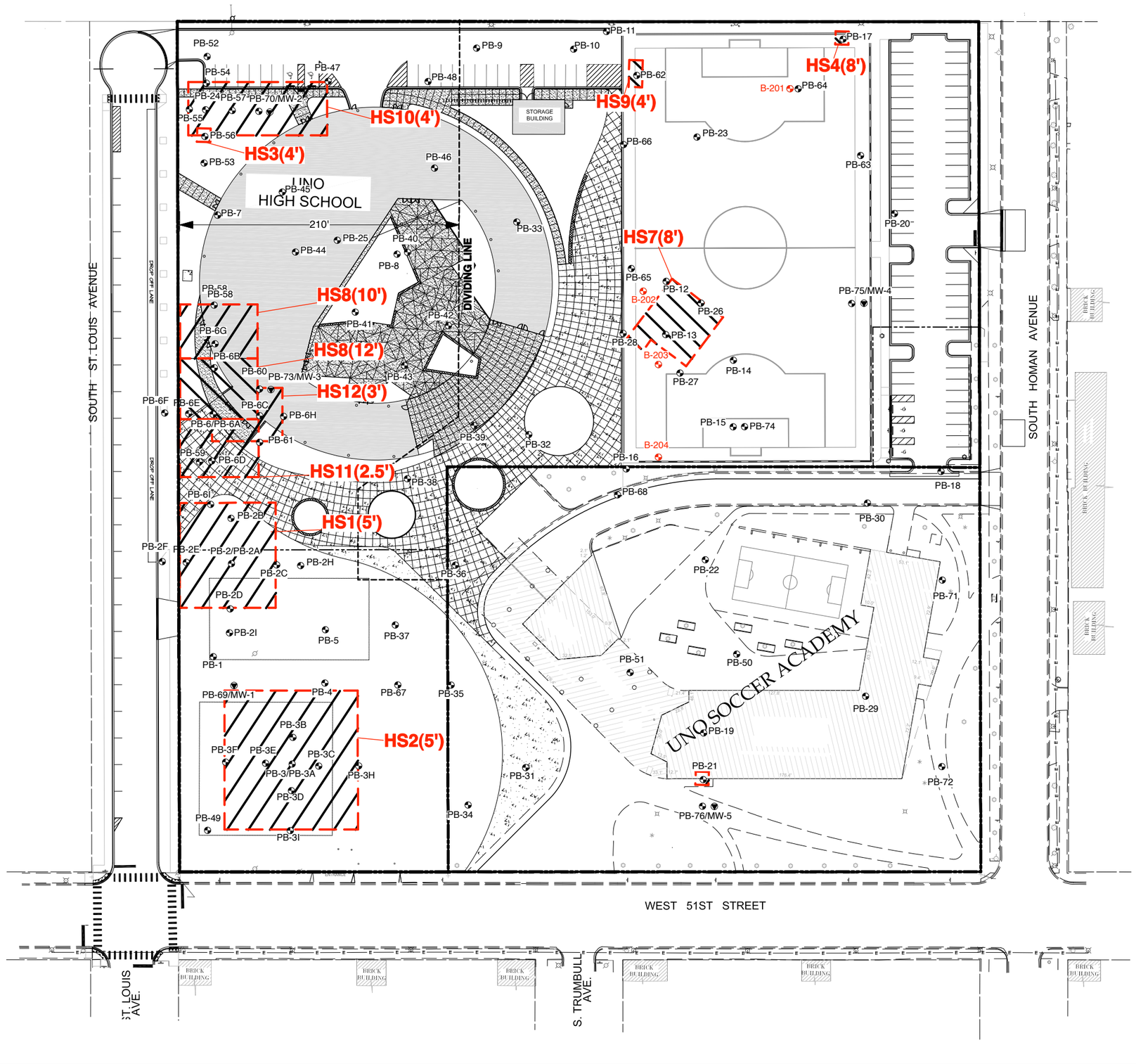

AREA OF PREVIOUS REMEDIATION- FILLED WITH CONTAMINATED NON-STRUCTURAL FILL

AREA OF PREVIOUS REMEDIATION- FILLED WITH CLEAN STONE FILL

HS7(8') PRIOR HOTSPOT REMEDIATION DESIGNATION & DEPTH FROM EXISTING GRADE

Figure 4 Proposed Remediation (Hot Spot-7)

North

Figure 4
Proposed Remediation
(Hot Spot 7)
3434 West 51st Street
Chicago, IL

Scale: 1" = 80'
0' 80'

Drawn by: Kayle Drucker

Job No: 10-0461-106

Date: July 5, 2012

Checked by: Jeff McClelland

Legend:
- Soil Boring Location
- Soil Boring Location (2012)
- Monitoring Well Location

Approximate Remediation Site Boundaries

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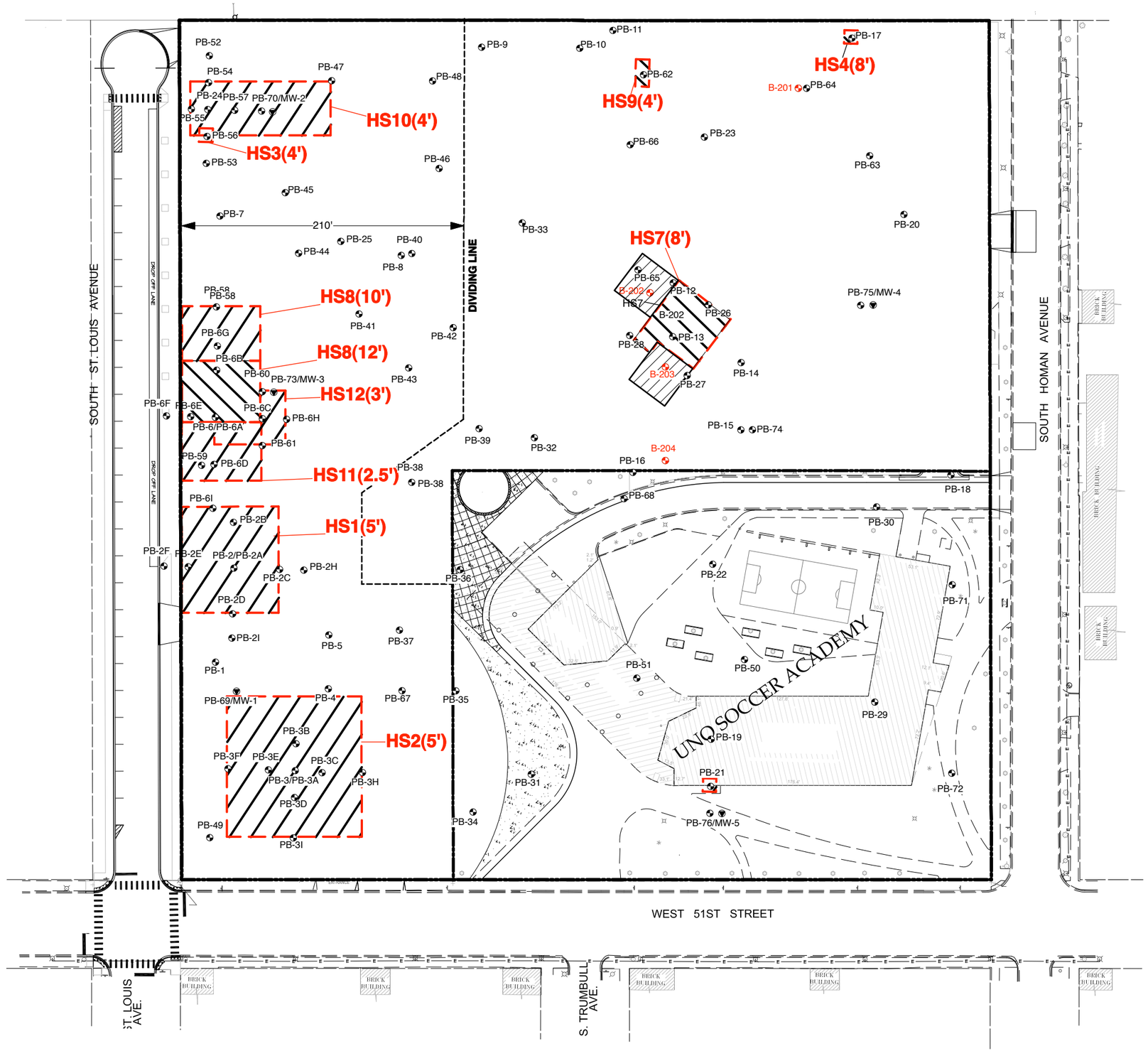

- AREA OF PREVIOUS REMEDIATION- FILLED WITH CONTAMINATED NON-STRUCTURAL FILL
- AREA OF PREVIOUS REMEDIATION- FILLED WITH CLEAN STONE FILL
- AREA OF PROPOSED REMEDIATION
- HS7(8') PRIOR HOTSPOT REMEDIATION DESIGNATION & DEPTH FROM EXISTING GRADE

Figure 5 Proposed Engineered Barriers

North

EAST/WEST DIVIDING LINE

ASPHALT

STORAGE BUILDING

UNO HIGH SCHOOL

CONCRETE

TURF

ASPHALT

SOUTH ST. LOUIS AVENUE

DROP-OFF LANE

DROP-OFF LANE

CONCRETE

SOUTH HOMAN AVENUE

BRICK BUILDING

REMEDIATION SITE #2

REMEDIATION SITE #1

UNO SOUTH ACADEMY

FUTURE DEVELOPMENT
(CURRENT ASPHALT/CONCRETE BARRIER)

WEST 51ST STREET

ST. LOUIS AVE.

S. TRUMBULL AVE.

BRICK BUILDING

BRICK BUILDING

BRICK BUILDING

BRICK BUILDING

BRICK BUILDING

BRICK BUILDING

Figure 5
Proposed Engineered Barriers
3434 West 51st Street
Chicago, IL

Scale: 1" = 80'
0' 80'

Drawn by: Kayle Drucker

Job No: 10-0461-106

Date: July 5, 2012

Checked by: Jeff McClelland

Legend:
- Proposed 3-foot Clean Soil Barrier
- 10-foot Clean Fill Barrier
- Asphalt Barrier
- Concrete Barrier
- Approximate Remediation Site Boundaries

PIONEER
ENGINEERING & ENVIRONMENTAL SERVICES

Table 1 Soil Sample Analytical Results: BTEX

TABLE NO. 1 Soil Sample Analytical Results: BTEX 3434 West 51st Street / Chicago, IL					Tier 1 Soil Remediation Objectives (Tier 1 SROs)						
					Residential		Construction Worker		Migration to Groundwater		CSAT(1)
Sample ID (Interval)	B202 (0-4)	B202 (6-8)	B203 (0-4)	B203 (4-8)	Ingestion	Inhalation	Ingestion	Inhalation	Class I	Class II	
Collection Date	4/13/12	4/13/12	4/13/12	4/13/12							
Benzene	**1.67**	**2.62**	**18.7**	**1.02**	12	0.8	2,300	2.2	0.03	0.17	870
Ethylbenzene	4.29	1.64	**56.0**	0.594	7,800	400	20,000	58	13	19	400
Toluene	1.42	0.136	0.979	<0.0309	16,000	650	410,000	42	12	29	650
Total Xylenes	**25.1**	1.05	12.5	0.259	16,000	320	41,000	5.6	150	150	320

Notes: Results listed in mg/kg (parts per million)

EPA test method SW846, 8260B/5035

Shaded/Bolded cell indicates value exceeds the most stringent Tier 1 SRO

"<" indicates not detected at stated detection limits

"--" indicates value not available

SROs pursuant to 35 IAC 742-Tiered Approach to Corrective Action Objectives (Appendix B, Table B)

(1) Soil Saturation Limits for Chemicals With Melting Point < 30°C (C_{SAT}) pursuant to 35 IAC 742-Tiered Approach to Corrective Action Objectives (Appendix A, Table A)

Table 2 Soil Sample Analytical Results: SPLP Lead and Chromium

TABLE NO. 2 Soil Sample Analytical Results: SPLP Metals 3434 West 51st Street / Chicago, IL			Tier 1 Soil Remediation Objectives (Tier 1 SROs)	
			Migration to Groundwater	
Sample ID (Interval)	**B201 (0-4)**	**B204 (4-6)**	**Class I**	**Class II**
Collection Date	**4/13/12**	**4/13/12**		
Chromium	--	0.00329	0.1	1.0
Lead	**0.0104**	--	0.0075	0.1

Notes: Results listed in mg/L (parts per million)
EPA test method SW846, 1311/6020 & 1311/7470A
Shaded/Bolded cell indicates value exceeds the most stringent Tier 1 SRO
"<" indicates not detected at stated detection limits
"--" indicates value not available
SROs pursuant to 35 IAC 742-Tiered Approach to Corrective Action Objectives (Appendix B, Table A)

Appendix A IL EPA SRP Reporting Form

Illinois Environmental Protection Agency

Bureau of Land • 1021 N. Grand Avenue E. • Box 19276 • Springfield • Illinois • 62794-9276

Site Remediation Program Form (DRM-2)
(To be Submitted with all Plans and Reports)

You may complete this form online, save a copy, print, sign and mail it to the address above.

I. Site Identification:

Site Name: 3434 West 51st Street Project

Street Address: 3434 West 51st Street P.O. Box:

City: Chicago State: IL Zip Code: 60632 Phone:

Illinois Inventory ID Number: 0316006117 IEMA Incident Number:

II. Remediation Applicant:

Applicant's Name: Andrew Alt

Company: United Neighborhood Organization (UNO)

Street Address: 954 W. Washington Blvd., 3rd Floor P.O. Box:

City: Chicago State: IL Zip Code: 60607 Phone: 312.432.6301

Email Address: aalt@uno-online.org

I hereby request that the Illinois EPA review and evaluate the attached project documents in accordance with the terms and conditions of the Environmental Protection Act (415 ILCS 5), implementing regulations, and the review and evaluation services agreement.

Remediation Applicant's Signature: Sr. VP for Andrew Alt Date: 7/5/12

III. Contact Person for Remediation Applicant:

Contact's Name: Andrew Alt

Company: United Neighborhood Organization (UNO)

Street Address: 954 W. Washington Blvd., 3rd Floor P.O. Box:

City: Chicago State: IL Zip Code: 60607 Phone: 312.432.6301

Email Address: aalt@uno-online.org

Contact Person for Consultant:

Contact's Name: Jeff McClelland

Company: Pioneer Environmental Services, LLC

Street Address: 700 N. Sacramento Blvd. Ste. 101 P.O. Box:

City: Chicago State: IL Zip Code: 60612 Phone: 773.299-1942

Email Address: jmcclelland@pioneerees.com

IV. Review & Evaluation Licensed Professional Engineer or Geologist ("RELPEG"), if applicable:

RELPEG's Name:

Company:

Street Address: P.O. Box:

City: State: Zip Code: Phone:

Email Address:

V. Project Documents Being Submitted:

Document Title: Amended RAP - Remediation Site #2
Date of Preparation of Plan or Report: 7/6/2012
Prepared by: Pioneer Environmental Services, LLC
Prepared For: United Neighborhood Organization

Type of Document Submitted:

- [ ] Site Investigation Report - Comprehensive
- [ ] Site Investigation Report - Focused
- [ ] Remediation Objectives Report - Tier 1 or 2
- [ ] Remediation Objectives Report - Tier 3
- [x] Remedial Action Plan
- [ ] Remedial Action Completion Report
- [ ] Sampling Plan
- [ ] Health and Safety Plan
- [ ] Community Relations Plan
- [ ] Risk Assessment
- [ ] Containment Fate & Transport Modeling
- [ ] Other: _____

Document Title: _____
Date of Preparation of Plan or Report: _____
Prepared by: _____
Prepared For: _____

Type of Document Submitted:

- [ ] Site Investigation Report - Comprehensive
- [ ] Site Investigation Report - Focused
- [ ] Remediation Objectives Report - Tier 1 or 2
- [ ] Remediation Objectives Report - Tier 3
- [ ] Remedial Action Plan
- [ ] Remedial Action Completion Report
- [ ] Sampling Plan
- [ ] Health and Safety Plan
- [ ] Community Relations Plan
- [ ] Risk Assessment
- [ ] Containment Fate & Transport Modeling
- [ ] Other: _____

Document Title: _____
Date of Preparation of Plan or Report: _____
Prepared by: _____
Prepared For: _____

Type of Document Submitted:

- [ ] Site Investigation Report - Comprehensive
- [ ] Site Investigation Report - Focused
- [ ] Remediation Objectives Report - Tier 1 or 2
- [ ] Remediation Objectives Report - Tier 3
- [ ] Remedial Action Plan
- [ ] Remedial Action Completion Report
- [ ] Sampling Plan
- [ ] Health and Safety Plan
- [ ] Community Relations Plan
- [ ] Risk Assessment
- [ ] Containment Fate & Transport Modeling
- [ ] Other: _____

VI. Professional Engineer's or Geologist's Seal or Stamp:

I attest that all site investigations or remedial activities that are subject of this plan(s) or report(s) were performed under my direction, and this document and all attachments were prepared under my direction or reviewed by e, and to the best of my knowledge and belief, the work described in the plan and report has been designed or completed in accordance with the Illinois Environmental Protection Act (415 ILCS 5), 35 Ill. Adm. Code 740, and generally accepted engineering practices or principles of professional geology, and the information presented is accurate and complete.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 Felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Engineer's or Geologist's Name: Jeffrey McClelland

Company: Pioneer Environmental, LLC

Registration Number: 062-054039 Phone: 773.722.9200

License Expiration Date: 11/2013

Signature: _____ Date: 7/6/12

Professional Engineer's or Geologist's Seal or Stamp:

Note: The authority of a Licensed Professional Geologist to certify documents submitted to the Illinois Environmental Protection Agency for review and evaluation pursuant to Title XVII of the Environmental Protection Act is limited to Site Investigation Reports (415 ILCS 58.7(f), as amended by P. A. 92-0735, effective July 25, 2002. A Licensed Professional Geologist cannot certify Remediation Objectives Reports, Remedial Action Plans or Remedial Action Completion Reports.

All information submitted is available to the public except when specifically designated by the Remediation Applicant to be treated confidentially as a trade secret or secret process in accordance with the Illinois Compiled Statutes, Section 7(a) of the Environmental Protection Act, applicable Rules and Regulations of the Illinois Pollution Control Board and applicable Illinois EPA rules and guidelines. The Illinois EPA is authorized to require this information under Sections 415 ILCS 5/58 - 58.12 of the Environmental Protection Act and regulations proumulgated thereunder. Disclosure of this information is required as a condition of participation in the Site Remediation Program. Failure to do so may prevent this form from being processed and could result in your plan(s) or report(s) being rejected. This form has been approved by the Forms Management Center.

Appendix B Pioneer's Investigation Protocol & Soil Boring Logs

SUBSURFACE SOIL SAMPLING PROTOCOL

Subsurface samples are collected by employing various soil boring techniques based on the site-specific conditions. Soil borings may be advanced using any of the following methodologies: 1) a conventional Ingersol Rand™ 300B with hollow stem augers and split-spoon sampling techniques, a Bosch™ manual hydraulic/ percussive Macro-Core® barrel sampler, a truck-mounted Geoprobe 5410 hydraulic/percussive direct push sampling unit utilizing dual-tube sampling techniques, limited access Geoprobe hand-cart with a 2-inch Macro-Core® barrel sampler, and/or stainless steel hand augers. The specific methodologies employed are described in the report and listed on the soil boring log for each soil boring location (i.e., IR-300B, Bosch, Geoprobe 5410, Geoprobe Hand-Cart, or HA, respectively).

The soil sampling activities are conducted in accordance with American Society of Testing and Materials (ASTM) standards (ASTM:D 1586 or 6282). Soil samples are collected with a stainless steel hand auger, a split-spoon sampler, and/or a Macro-Core® sampler at 2-3 foot intervals depending on the specific method used. In the split-spoon sampling procedures, a split-barrel sampler having either a 2-inch or 13/16-inch outside diameter, an inside diameter of 1-3/8 or 7/8 inches, and a length of 2.5 or 3 feet is driven into the soil to collect a representative and undisturbed sample. In the Macro-Core® barrel sampling technique, a stainless steel barrel having a 2-inch outside diameter, an inside diameter of 1-1/2 inches, and a length of 2 or 3 feet is fitted with a dedicated disposable PVC liner and is driven into the soil to collect a representative and undisturbed sample.

The soil borings are sampled across continuous intervals from ground surface to the desired sampling depth, unless otherwise noted. The desired sampling depth is predicated on the specific conditions to be assessed, but may be restricted due to site-specific conditions. The drilling is directed by a Pioneer Environmental Services, LLC (Pioneer) Field Project Geologist/Engineer, who field screens auger cuttings and soil samples, prepares samples for laboratory analysis, logs geologic materials encountered during drilling, observes the drilling activities, and supervises sample collection.

After retrieval, soil samples obtained from each interval are immediately field screened for the presence of organic vapors along the exposed surface of the soil sample under ambient conditions. The samples are screened for volatile organic compounds (VOCs) and/or semivolatile organic compounds (SVOCs) using a MiniRAE™ 2000 handheld air monitor / photoionization detector (PID). This device is sensitive to a variety of petroleum/hazardous substances, including those typically targeted in subsurface investigations, and provide qualitative indications of the relative concentrations of organic contaminants trapped in the sample matrix.

After the sampling sleeve or split-spoon is opened and screened, and where elevated ambient screening results or other field indications of contamination are observed, an undisturbed portion of the sample from the portion of the interval displaying the highest indications of contamination is immediately selected for possible analysis. Where no elevated screening results are registered, the sample selected for analysis is chosen based on the nature of the REC being assessed, and the judgment of the Field Project Manager. The sample is immediately packed into laboratory provided glassware, or preserved in accordance with US EPA's SW-846 Method 5035, if submitted for VOC analysis. In accordance with Method 5035, when soil samples are analyzed for VOCs, one of two field sampling methods is used. 1) A measured portion of the sample is placed in an EnCore™ sampler, or equivalent, immediately after collection, with the appropriate container quantities and volumes determined by the scope of work and field conditions. The EnCore™ samplers, or equivalent, are delivered to the laboratory and preserved within 48 hours of sample collection. 2) A measured portion of the sample collected in the field (subsample - small diameter core) is transferred directly from the sampling device(s) to pre-labeled, pre-weighed, air-tight, laboratory-provided glassware with appropriate preservative (either sodium bisulfate-for samples with estimated VOC concentrations less than 200 ppb; or methanol-for samples with estimated VOC concentrations greater than 200 ppb) immediately after sample collection.

After initial screening and sample preparation, a portion of the remaining soil from the sample interval is logged according to its predominant geological characteristics, in accordance with the Unified Soil Classification System (USCS). The sample is further examined for the presence of odors and/or visual evidence of contamination (hydrocarbon or other), and a headspace reading is obtained from a portion of the sample that is allowed to equilibrate to the ambient atmospheric temperature in a dedicated Zip-lock™ bag for approximately 15 minutes,

SUBSURFACE SOIL SAMPLING PROTOCOL (cont.)

depending upon various factors) using a PID to obtain a maximum field reading. The soil classifications and the results of the headspace screening are described in the report and listed on the soil boring logs.

Any soil samples chosen for possible analysis are packed in appropriate containers, properly labeled, designated for possible analysis, and placed in a cooler on ice for storage immediately after sample packing/preservation has been completed to preserve the integrity of the sample during field activities. The samples are subsequently shipped in a cooler on ice via a delivery service overnight to an independent laboratory under standard chain-of-custody procedures, or are retrieved (on the same day or as soon as practicable) by the contract laboratory. Samples are selected based on the scope of work, field observations (i.e. visual/odor observations, elevated PID readings, etc.), other site-specific conditions, and the judgment of the Pioneer Field Project Geologist/Engineer, and are submitted for possible analysis of the appropriate compounds targeted in the investigation.

Drill cuttings and liquids generated are left at the borehole. All boreholes are decommissioned in accordance with applicable Illinois Department of Public Health guidelines. When required, these spoils are contained in 55-gallon Type 17H drums. Decontamination procedures for the drilling equipment consists of steam cleaning the augers after each boring using a biodegradable detergent and high-pressure steam rinse. The split-spoon samplers are decontaminated between each sample interval by washing in a solution of Alconox and water, and triple rinsing with clean heated water.

Any deviations to or modifications of this standard protocol will be described on a site by site basis.

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Boring Log

Boring No.: B-201

Site:
3434 West 51st Street
Chicago, IL

Date Begin: 4/13/2012

Date End: 4/13/2012

PID (ppm)	Sample Recovery	Sample	Depth Feet	Soil Class	Lithology	Description	Remarks
				Asphalt		Asphalt-4" with gravel base-6"	
<1	60			Fill		Black FILL with sand and gravel	No Odor, No Visual
			4			Boring terminated at 4 feet BSG	
			8				
			12				

Completion Notes:
Hatched pattern denotes sample analyzed.

Drill Rig:	GeoProbe 5410
Driller:	J. Valadez
Geologist:	T. Mueller
LUST Incident No:	

Water Depth While Drilling: ND Water Depth After Drilling: NA

Project Number: 10-0461-106

PIONEER
ENGINEERING & ENVIRONMENTAL SERVICES

Boring Log

Boring No.: B-202

Site:
3434 West 51st Street
Chicago, IL

Date Begin: 4/13/2012

Date End: 4/13/2012

PID (ppm)	Sample Recovery	Sample	Depth Feet	Soil Class	Lithology	Description	Remarks
				Asphalt		Asphalt-4" with gravel base-6"	
641	75			Fill		Black FILL with clay, sand and gravel	Odors, Black Staining
			4				
622				SP		Black Sand, fine, loose, moist	Odors, Black Staining
				CL		Black/brown Silty CLAY, soft, moist	
933				SP		Black SAND, loose, wet	Odors, Black Staining
			8				
<1	95			CL		Brown silty CLAY, very stiff, wet	No Odor, No Visual
			12				
						Boring terminated at 12 feet BSG	

Completion Notes:
Hatched pattern denotes sample analyzed.

Drill Rig:	GeoProbe 5410
Driller:	J. Valadez
Geologist:	T. Mueller
LUST Incident No:	

Water Depth While Drilling: ND Water Depth After Drilling: NA

Project Number: 10-0461-106

PIONEER
ENGINEERING & ENVIRONMENTAL SERVICES

Boring Log

Boring No.: B-203

Site:
3434 West 51st Street
Chicago, IL

Date Begin: 4/13/2012

Date End: 4/13/2012

PID (ppm)	Sample Recovery	Sample	Depth Feet	Soil Class	Lithology	Description	Remarks
				Asphalt		Asphalt-4" with gravel base-6"	
1,050	60			Fill		Black FILL with clay and gravel	Odors, Black Staining
			4			Black to brown Silty CLAY, soft to medium stiff, moist	
1,346	75			CL			Odors, No Visual
			8			Brown silty CLAY, soft to hard, moist	
<1	100			CL			Odors, No Visual
			12			Boring terminated at 12 feet BSG	

Completion Notes:
Hatched pattern denotes sample analyzed.

Drill Rig:	GeoProbe 5410
Driller:	J. Valadez
Geologist:	T. Mueller
LUST Incident No:	

Water Depth While Drilling: ND Water Depth After Drilling: NA

Project Number: 10-0461-106 Page 1

Boring Log

Boring No.: B-204

Site:
3434 West 51st Street
Chicago, IL

Date Begin: 4/13/2012

Date End: 4/13/2012

PID (ppm)	Sample Recovery	Sample	Depth Feet	Soil Class	Lithology	Description	Remarks
				Asphalt		Asphalt-4" with gravel base-6"	
<1	60			Fill		Black FILL with sand and gravel	No Odors, No Visual
				CL		Black Silty CLAY, soft, moist	
			4				
<1	90			CL		Brown silty CLAY, medium stiff, moist	No Odors, No Visual
			8				
						Boring terminated at 8 feet BSG	
			12				

Completion Notes:
Hatched pattern denotes sample analyzed.

Drill Rig: GeoProbe 5410

Driller: J. Valadez

Geologist: T. Mueller

LUST Incident No:

Water Depth While Drilling: ND Water Depth After Drilling: NA

Project Number: 10-0461-106

Appendix C Laboratory Analytical Report

SUBURBAN LABORATORIES, Inc.

4140 Litt Drive Hillside, Illinois 60162
Tel. (708) 544-3260 Toll Free (800) 783-LABS
Fax (708) 544-8587
www.suburbanlabs.com

April 20, 2012

Workorder: 1204732

Jeffrey McClelland
Pioneer Environmental Services LLC
700 N. Sacramento Blvd., Suite 101
Chicago, Illinois 60612

TEL: (773) 299-1942
FAX: (773) 722-9201
RE: 3434 W. 51ST

Dear Jeffrey McClelland:

Suburban Laboratories, Inc. received 6 sample(s) on 04/13/12 for the analyses presented in the following report.

All data for the associated quality control (QC) met EPA, method, or internal laboratory specifications except where noted in the case narrative. If you are comparing these results to external QC specifications or compliance limits and have any questions, please contact us.

This final report of laboratory analysis consists of this cover letter, case narrative, analytical report, dates report, and any accompanying documentation on, but not limited to, chain of custody records, raw data, and letters of explanation or reliance. This report may not be reproduced, except in full, without the prior written approval of Suburban Laboratories, Inc.

If you have any questions regarding these test results, please call me at (708) 544-3260.

Sincerely,

Melissa Amador

Melissa Amador
Project Manager

Suburban Laboratories, Inc.
4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Case Narrative

Client: Pioneer Environmental Services LLC
Project: 3434 W. 51ST
WorkOrder: 1204732
Temperature of samples upon receipt at SLI: 2.5 C

Date: April 20, 2012
PO #: 10-0461-105
QC Level:
Chain of Custody #: 90984

General Comments:
- All results reported in wet weight unless otherwise indicated. (dry = Dry Weight)
- Sample results relate only to the analytes of interest tested and to sample as received by the laboratory.
- Environmental compliance sample results meet the requirements of 35 IAC Part 186 unless otherwise indicated.
- Waste water analysis follows the rules set forth in 40 CFR part 136 except where otherwise noted.
- Accreditation by the State of Illinois is not an endorsement or a guarantee of the validity of data generated.
- For more information about the laboratories' scope of accreditation, please contact us at (708) 544-3260 or the Agency at (217) 782-6455.

Abbreviations:
- Reporting Limit: The concentration at which an analyte can be routinely detected on a day to day basis, and which also meets regulatory and client needs.
- Quantitation Limit: The lowest concentration at which results can be accurately quantitated.
- J: The analyte was positively identified above our Method Detection Limit and is considered detectable and usable; however, the associated numerical value is the approximate concentration of the analyte in the sample.
- ATC: Automatic Temperature Correction. - TNTC: Too Numerous To Count
- In Laboratory: EPA recommends this analyte be analyzed "immediately" (e.g., tests that should be performed in the field within 15 minutes of collection). Analytes with "immediate" hold times are analyzed as soon as possible upon receipt by the laboratory.
- TIC: Tentatively Identified Compound (GCMS library search identification, concentration estimated to nearest internal standard).
- SS (Surrogate Standard): Quality control compound added to the sample by the lab.

Method References:
For a complete list of method references please contact us.
- E: USEPA Reference methods
- SW: USEPA, Test Methods for Evaluating Solid Waste (SW-846)
- M: Standard Methods for the Examination of Water and Wastewater
- USP: Latest version of United States Pharmacopeia

Workorder Specific Comments:

Suburban Laboratories, Inc.
4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Laboratory Results

Client ID: Pioneer Environmental Services LLC
Project Name: 3434 W. 51ST
Report Date: April 20, 2012
Workorder: **1204732**

Client Sample ID: **B201 (0-4)**
Lab ID: 1204732-001 **Date Received:** 04/13/2012 3:50 PM
Matrix: SOIL
Collection Date: 04/13/2012 9:42 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
METALS BY ICPMS, SPLP LEACHED		Method: SW846-6020-Rev 0, Sep-94				Analyst: dc	
Lead	0.0104	0.000500		mg/L	1	04/19/2012 7:23 PM	8941

Client Sample ID: **B202 (0-4)**
Lab ID: 1204732-002 **Date Received:** 04/13/2012 3:50 PM
Matrix: SOIL
Collection Date: 04/13/2012 11:15 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method: EPA-8260B-Rev 2, Dec-96				Analyst: ms	
Benzene	1.67	0.0204		mg/Kg-dry	74.05	04/18/2012 2:40 PM	R22185
Ethylbenzene	4.29	0.0817		mg/Kg-dry	74.05	04/18/2012 2:40 PM	R22185
m,p-Xylene	19.4	0.163		mg/Kg-dry	74.05	04/18/2012 2:40 PM	R22185
o-Xylene	5.68	0.0817		mg/Kg-dry	74.05	04/18/2012 2:40 PM	R22185
Total Xylenes	25.1	0.163		mg/Kg-dry	74.05	04/18/2012 2:40 PM	R22185
Toluene	1.42	0.0817		mg/Kg-dry	74.05	04/18/2012 2:40 PM	R22185
Internal Quality Control Compounds							
SS: 4-Bromofluorobenzene	105	85.9-111		%REC	74.05	04/18/2012 2:40 PM	R22185
SS: Dibromofluoromethane	107	87.5-113		%REC	74.05	04/18/2012 2:40 PM	R22185
SS: Toluene-d8	98.5	83.3-121		%REC	74.05	04/18/2012 2:40 PM	R22185
PERCENT MOISTURE		Method: ASTM-D2216-Rev 2005				Analyst: ac	
Percent Moisture	9.4	1.0		wt%	1	04/17/2012 3:00 PM	R22132

Qualifiers:

*/x	Value exceeds Maximum Contaminant Level
c	Analyte not in SLI scope of accreditation
G	Refer to case narrative page for specific comments
J	Analyte detected below quantitation limit (QL)
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
E	Estimated, detected above quantitation range
H	Holding times for preparation or analysis exceeded
N	Tentatively identified compounds
R	RPD outside accepted recovery limits

Suburban Laboratories, Inc.
4140 Litt Drive, Hillside, IL 60162 (708) 544-3260

Laboratory Results

Client ID: Pioneer Environmental Services LLC
Project Name: 3434 W. 51ST
Report Date: April 20, 2012
Workorder: **1204732**

Client Sample ID: **B202 (6-8)**
Lab ID: 1204732-003 **Date Received:** 04/13/2012 3:50 PM
Matrix: SOIL
Collection Date: 04/13/2012 11:21 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method: EPA-8260B-Rev 2, Dec-96				Analyst: ms	
Benzene	2.62	0.00833		mg/Kg-dry	29.57	04/18/2012 3:16 PM	R22185
Ethylbenzene	1.64	0.0333		mg/Kg-dry	29.57	04/18/2012 3:16 PM	R22185
m,p-Xylene	0.950	0.0666		mg/Kg-dry	29.57	04/18/2012 3:16 PM	R22185
o-Xylene	0.0993	0.0333		mg/Kg-dry	29.57	04/18/2012 3:16 PM	R22185
Total Xylenes	1.05	0.0666		mg/Kg-dry	29.57	04/18/2012 3:16 PM	R22185
Toluene	0.136	0.0333		mg/Kg-dry	29.57	04/18/2012 3:16 PM	R22185
Internal Quality Control Compounds							
SS: 4-Bromofluorobenzene	115	85.9-111	S	%REC	29.57	04/18/2012 3:16 PM	R22185
SS: Dibromofluoromethane	103	87.5-113		%REC	29.57	04/18/2012 3:16 PM	R22185
SS: Toluene-d8	106	83.3-121		%REC	29.57	04/18/2012 3:16 PM	R22185
PERCENT MOISTURE		Method: ASTM-D2216-Rev 2005				Analyst: ac	
Percent Moisture	11	1.0		wt%	1	04/17/2012 3:00 PM	R22132

Client Sample ID: **B203 (0-4)**
Lab ID: 1204732-004 **Date Received:** 04/13/2012 3:50 PM
Matrix: SOIL
Collection Date: 04/13/2012 10:30 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method: EPA-8260B-Rev 2, Dec-96				Analyst: ms	
Benzene	18.7	0.192		mg/Kg-dry	636.1	04/20/2012 3:19 AM	R22232
Ethylbenzene	56.0	0.769		mg/Kg-dry	636.1	04/20/2012 3:19 AM	R22232
m,p-Xylene	11.2	0.154		mg/Kg-dry	63.61	04/18/2012 5:24 PM	R22185
o-Xylene	1.29	0.0769		mg/Kg-dry	63.61	04/18/2012 5:24 PM	R22185
Total Xylenes	12.5	0.154		mg/Kg-dry	63.61	04/18/2012 5:24 PM	R22185
Toluene	0.979	0.0769		mg/Kg-dry	63.61	04/18/2012 5:24 PM	R22185
Internal Quality Control Compounds							
SS: 4-Bromofluorobenzene	94.1	85.9-111		%REC	636.1	04/20/2012 3:19 AM	R22232
SS: Dibromofluoromethane	109	87.5-113		%REC	63.61	04/18/2012 5:24 PM	R22185
SS: Toluene-d8	115	83.3-121		%REC	63.61	04/18/2012 5:24 PM	R22185
PERCENT MOISTURE		Method: ASTM-D2216-Rev 2005				Analyst: ac	
Percent Moisture	17	1.0		wt%	1	04/17/2012 3:00 PM	R22132

Qualifiers:

*/x	Value exceeds Maximum Contaminant Level
c	Analyte not in SLI scope of accreditation
G	Refer to case narrative page for specific comments
J	Analyte detected below quantitation limit (QL)
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
E	Estimated, detected above quantitation range
H	Holding times for preparation or analysis exceeded
N	Tentatively identified compounds
R	RPD outside accepted recovery limits

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Laboratory Results

Client ID: Pioneer Environmental Services LLC
Project Name: 3434 W. 51ST
Report Date: April 20, 2012
Workorder: **1204732**

Client Sample ID: **B203 (4-8)**
Lab ID: 1204732-005 **Date Received:** 04/13/2012 3:50 PM
Matrix: SOIL
Collection Date: 04/13/2012 10:36 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
VOLATILE ORGANIC COMPOUNDS		Method: EPA-8260B-Rev 2, Dec-96				Analyst: ms	
Benzene	1.02	0.00774		mg/Kg-dry	25.62	04/18/2012 6:49 PM	R22185
Ethylbenzene	0.594	0.0309		mg/Kg-dry	25.62	04/18/2012 6:49 PM	R22185
m,p-Xylene	0.224	0.0619		mg/Kg-dry	25.62	04/18/2012 6:49 PM	R22185
o-Xylene	0.0353	0.0309		mg/Kg-dry	25.62	04/18/2012 6:49 PM	R22185
Total Xylenes	0.259	0.0619		mg/Kg-dry	25.62	04/18/2012 6:49 PM	R22185
Toluene	<0.0309	0.0309		mg/Kg-dry	25.62	04/18/2012 6:49 PM	R22185
Internal Quality Control Compounds							
SS: 4-Bromofluorobenzene	112	85.9-111	S	%REC	25.62	04/18/2012 6:49 PM	R22185
SS: Dibromofluoromethane	106	87.5-113		%REC	25.62	04/18/2012 6:49 PM	R22185
SS: Toluene-d8	99.5	83.3-121		%REC	25.62	04/18/2012 6:49 PM	R22185
PERCENT MOISTURE		Method: ASTM-D2216-Rev 2005				Analyst: ac	
Percent Moisture	17	1.0		wt%	1	04/17/2012 3:00 PM	R22132

Client Sample ID: **B204 (4-6)**
Lab ID: 1204732-006 **Date Received:** 04/13/2012 3:50 PM
Matrix: SOIL
Collection Date: 04/13/2012 10:50 AM

Parameter	Result	Report Limit	Qual.	Units	Dilution Factor	Date Analyzed	Batch ID
METALS BY ICPMS, SPLP LEACHED		Method: SW846-6020-Rev 0, Sep-94				Analyst: dc	
Chromium	0.00329	0.00250		mg/L	1	04/19/2012 7:33 PM	8941

Qualifiers:

*/x	Value exceeds Maximum Contaminant Level
c	Analyte not in SLI scope of accreditation
G	Refer to case narrative page for specific comments
J	Analyte detected below quantitation limit (QL)
ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
E	Estimated, detected above quantitation range
H	Holding times for preparation or analysis exceeded
N	Tentatively identified compounds
R	RPD outside accepted recovery limits

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PREP DATES REPOR

Client: Pioneer Environmental Services LLC
Project: 3434 W. 51ST

Report Date: April 20, 2012
Lab Order: **1204732**

Sample ID	Collection Date	Batch ID	Prep Method	Prep Test Name	TCLP Date	Prep Date
1204732-001A	04/13/12 9:42:00 AM	8909	200.2_ICPT_PR	AQUEOUS PREP TOTAL METALS: ICP		04/17/12
		8941	200.2_ICPMSSP	AQUEOUS PREP TOTAL METALS: ICPMS		04/19/12
		8883	1312LM	SPLP SAMPLE PREP (Metals)		04/16/12
1204732-002A	04/13/12 11:15:00 A	8916	5035PR	CLOSED SYSTEM P&T VOC Prep		04/18/12
1204732-003A	04/13/12 11:21:00 A	8916	5035PR	CLOSED SYSTEM P&T VOC Prep		04/18/12
1204732-004A	04/13/12 10:30:00 A	8916	5035PR	CLOSED SYSTEM P&T VOC Prep		04/18/12
1204732-005A	04/13/12 10:36:00 A	8916	5035PR	CLOSED SYSTEM P&T VOC Prep		04/18/12
1204732-006A	04/13/12 10:50:00 A	8909	200.2_ICPT_PR	AQUEOUS PREP TOTAL METALS: ICP		04/17/12
		8941	200.2_ICPMSSP	AQUEOUS PREP TOTAL METALS: ICPMS		04/19/12
		8883	1312LM	SPLP SAMPLE PREP (Metals)		04/16/12

SUBURBAN LABORATORIES, Inc.

4140 Litt Drive Hillside, IL 60162 Tel. 708.544.3260 Fax: 708.544.8587 Toll Free: 800.783.LABS www.suburbanlabs.com

CHAIN OF CUSTODY RECORD

90984

Company Name: PIONEER

Company Address: 700 N SACRAMENTO

City: CHGO State: IL Zip: 60612

Phone: 773 722 9200 Fax: ☐ Fax Report

Email Address: JMCLELLAND@PIONEERLEES.COM ☐ Final Report will be emailed

Project ID/ Location: 3434 W 51ST

Project Manager (Report to): JEFF

Sample Collector(s) Name: VM

TURNAROUND TIME REQUESTED

☒ Normal ☐ RUSH* *Additional Rush Charges Approved.

*Date & Time Needed: _____

Normal TAT is specified on the price quotation or fee schedule. Rush work must be pre-approved and additional charges apply.

Specify Regulatory Program: (Required) ☐ None/Info Only

☐ LUST ☐ SRP ☐ SDWA

☐ 503 Sludge ☐ NPDES ☐ MWRDGC

☐ Disposal ☐ Other* *Please specify in comment section below.

ANALYSIS & METHOD REQUESTED

Enter an "X" in box below for request

Page 1 of 1

PO No. 10-0461-105

Shipping Method

Reporting Level (at additional charge) 1 2 3 4

LAB USE ONLY

SLI ORDER No. 120732

Sample containers supplied by customer? ☐ Yes

Temperature of Received Samples 2.5 °C

Samples received the same day as collection? ☐ Yes

	SAMPLE IDENTIFICATION *Use One Line Per Preservation & Container Type*	COLLECTION DATE	COLLECTION TIME	MATRIX	GRAB/ COMP.	CONTAINERS Qty	CONTAINERS SIZE & TYPE	PRESERVATIVE	SPLP LEAD	BTEX	SPLP CHROMIUM	R	Condition	Split	LAB #
1	B201 (0-4)	3/13/12	942	SO		1	4oz (6)	NONE	X					-	001A
2	B202 (0-4)	/ /	1115			2	4oz/40mL	NONE/HCl		X				-	002A/B
3	B202 (6-8)	/ /	1121			↓	↓	↓		X				-	003A/B
4	B203 (0-4)	/ /	1030							X				-	004A/B
5	B203 (4-8)	/ /	1036							X				-	005A/B
6	B204 (4-6)	/ /	1050	↓		1	4oz (6)	NONE			X			-	006A
7		/ /													
8		/ /													
9		/ /													
10		/ /													
11		/ /													
12		/ /													

MATRIX: Drinking Water (DW), Soil (S), Waste Water (WW), Surface Water(SW), Ground Water (GW), Solid Waste (WA), Sludge (U), Wipe (P) **CONTAINER:** 2oz, 4oz, 8oz, 40ml Vial, 500ml, Liter (L), Tube, Glass (G), Plastic (P) **PRESERVATIVE:** H_2SO_4, HCl, HNO_3, Methanol (MeOH), NaOH, Sodium Bisulfate (NaB), $Na_2S_2O_3$

COMMENTS & SPECIAL INSTRUCTIONS:

CONDITION CODES

1. Improper/damaged container/cap
2. Improper preservation
3. Insufficient sample volume
4. Headspace/air bubbles for VOCs
5. Received past holding time
6. Received frozen
7. Label conflicts with COC

1. Relinquished By	Date	2. Relinquished By	Date	3. Relinquished By	Date	4. Relinquished By	Date
Received By ☐ Ice present	Time 3:50	Received By ☐ Ice present	Time	Received By ☐ Ice present	Time	Received By ☐ Ice present	Time

Submission of samples subject to Terms and Conditions on back. Rev. 07/20/08 White-Original, Pink-Sampler Copy